Using Ecological Integrity Assessment and Advanced Information Management to Guide Wetlands Management and Decision-Making in Rwanda

Implementing a Plan for Sustainable and Collaborative Wetlands Assessment

Preparing tree seedlings to protect Akanyaru wetland buffer zone (top); a water tank to irrigate farmers fields with solar energy near Cyohoha lake (bottom)

If well conserved, Rwanda's wetlands can contribute much in the achievement of the country's green growth objectives.

Wetlands constitute the backbone of Rwanda's economy. They provide various goods and services that millions of Rwandans depend on for their livelihoods and they are crucial to water, energy, and agriculture sectors.

Rapid urbanization, industrial development, intensification of agriculture, and climate change are the main drivers of change in wetlands in Rwanda. The threats linked with these drivers such as pollution, biodiversity loss and habitat degradation have led to many of the wetlands in the country lose their ecological character thus hampering their capacity to continue effectively providing the services millions of Rwandans depend on.

In order for Rwanda to stay on the green development path, proper management of these important ecosystems is needed and decisions that affect them need to be well informed so that potential issues are detected on time and appropriate measures are taken to mitigate those issues. For this to happen, accurate and updated information on wetlands and their biodiversity and ecosystem services, is needed so that development plans are based on sound data and necessary compromises are made consciously and responsibly.

ARCOS, with generous funding from the JRS Biodiversity Foundation, led a stakeholder engagement process in June-September 2017 to develop a wetlands assessment plan for Rwanda, a plan which includes the establishment of baseline information on Rwanda's wetlands biodiversity and ecosystem services and the development of a coordination mechanism to manage and keep this information updated in the future.

The current project will put in place the foundations for the implementation of this plan and develop the required infrastructure and capacity for proper management of wetlands biodiversity information in Rwanda.

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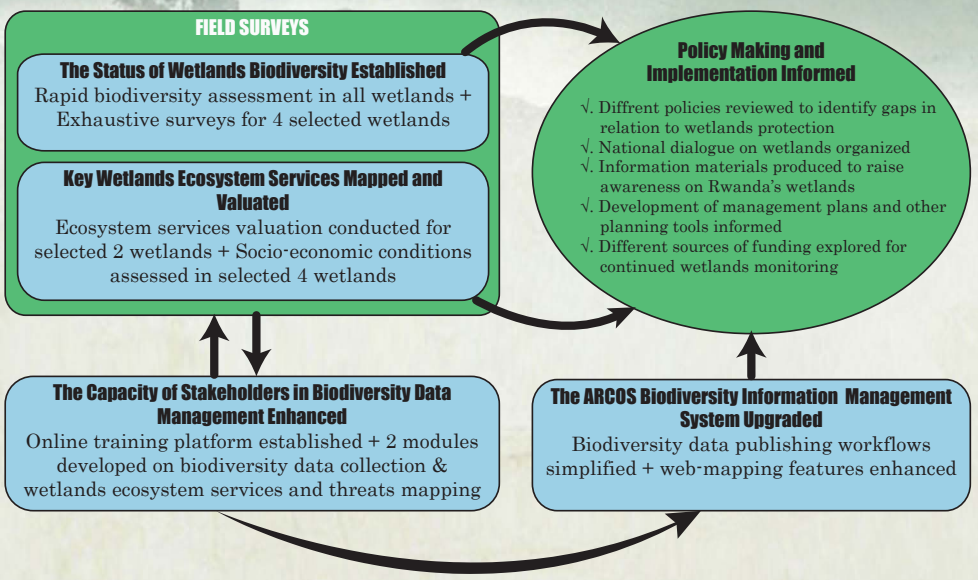
Objectives and Expected Results of the Wetlands Ecological Integrity Assessment Project

The goal of this project is to avail information on Rwanda's wetland biodiversity and ecological integrity, build the capacity of key players, and provide adequate information management capacity to guide decision-making.

Using standardized tools and methodologies, biodiversity data and information on Rwanda's wetlands ecosystem services will be collected and collated. In addition, an information system will be established to ensure this information is accessible to all concerned stakeholders.

The project will also put in place a mechanism to mainstream the results of wetlands ecological integrity assessment into policy making and implementation and establish an institutional collaboration framework for long-term wetlands biodiversity monitoring in the country.



Component 1: Biodiversity Assessments

A baseline on the status of wetland's biodiversity will be established as a result of a rapid assessment of all wetlands across the country and an exhaustive biodiversity assessment of 4 key selected wetlands. Taxa that will be focused on include Birds, Amphibians, Fish, Plants, and Algae.

Component 2: Wetlands Ecosystem Services Mapping and Valuation

Using the IUCN's Integrated Wetland Assessment Toolkit, the value of ecosystem services for 2 selected wetlands will be estimated to inform key decisions on their utilization. In addition, maps depicting distribution of key ecosystem services and some threats affecting wetlands will be produced using' GIS and Remote Sensing (Building on methodologies developed and piloted by the DeMo Wetlands Project - University of Bonn & Remote Sensing Solutions GmbH)

Component 3: Biodiversity Information Management System

The ARCOS' Biodiversity Information Management System (ARBIMS) is a regional platform that facilitates access to biodiversity data and information using international data standards and open source tools.

ARBIMS will be upgraded for improved web-mapping, better data visualization, and more simplified data publishing workflows.

Component 4: Capacity Building

An eLearning platform will be put in place and online training modules will be developed on biodiversity data collection and wetlands ecosystem services mapping. The development of these modules will leverage the existing online training initiatives in this field such as the Biodiversity Informatics Curriculum Project.

Project Partners and Beneficiaries

The Project will be coordinated by ARCOS and REMA with funding and technical support from JRS Biodiversity Foundation. Other implementing partners include IUCN's Forest Landscape Restoration (FLR) Hub, the Centre for Geographic Information System (CGIS) and the Centre of Excellence in Biodiversity and Natural Resources Management (CoEB) at University of Rwanda, and Association pour la Conservation de la Nature au Rwanda (ACNR). Finally, the project will work closely with the following partners as direct beneficiaries (data users):

☞ Ministry of Environment and REMA

REMA is the national Agency in charge of overall environmental monitoring. It is the de-facto regulatory authority for wetlands and it is the national implementing agency for various international agreements related to freshwater ecosystems such as the CBD and the Ramsar Convention. REMA has also in its mandate the obligation to regularly produce national State of the Environment reports; a task that inherently requires availability of data on key ecosystems such as wetlands. In this sense, the agency will benefit from this project by having a reliable source of data on wetlands status and trends in the country which will allow it to better fulfil its mandate.

☞ Rwanda Water and Forestry Authority (RWFA)

RWFA is the government agency in charge of monitoring both the quality and quantity of national water resources and ensures its allocation is done in a way that is conducive to sustainable development of all sectors that seek concurrent (competitive) use of these resources. RWFA will thus be one of the key beneficiaries of the project since it will be able to use data produced by the project to produce its regular national water quality reports.

☞ MINAGRI and the Rwanda Agricultural Board (RAB)

RAB is the technical arm of the ministry of agriculture in charge of research in agriculture sector across the country. It provides the required scientific and technical backdrop to agricultural programmes and policies across the country. Working with RAB, this project's recommendations will be incorporated into agricultural decision making processes and thus will help improve the sector while minimizing its impact on the freshwater ecosystems.

☞ Rwanda Development Board (RDB)

RDB is the Rwanda's national agency in charge of evaluation of Environmental Impact Assessments (EIAs). In this capacity, RDB will benefit from the improved availability of data and information on the status of wetlands in the country since this information will be used to guide decision-making on where investment projects could be implemented. In addition, RDB has also the mandate to manage wetlands located inside national parks and will therefore use data from this project to update profiles of these national parks.